

Spending and Funding for Highways

The nation's network of highways plays a vital role in the U.S. economy; private commercial activity and people's daily lives depend on that transportation infrastructure. In 2007, the public sector spent \$146 billion to build, operate, and maintain highways in the United States. About three-quarters of that total was provided by state and local governments. One-quarter was provided by the federal government, primarily through the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The initial authorization for that law has expired; as the Congress considers the future role of the federal government in providing highway infrastructure, it faces three important questions: how to structure decisionmaking about highway projects, how much money to spend on highways, and how to pay for that spending.

Making Decisions About Highway Projects

In the United States, almost all highway infrastructure is provided by the public sector. Although private firms play a large role in building, operating, and maintaining highways, the federal government and state and local governments typically determine which projects to undertake and how much to spend on them.

The public sector provides most highway infrastructure for several reasons that tend to limit the role of the private sector. First, such infrastructure displays, at least to some degree, important characteristics of "public goods." Such goods are usually not profitable for the private sector to produce, because once they have been produced, they are available to anyone who wants to use them; as a result, they are often provided by the public sector. Second, because such infrastructure is costly to build, though less expensive to operate and maintain, having competing highway networks is not practical. As a result, such "natural monopolies" are often either provided directly by the government or regulated by it. Third, the benefits of highways—promoting commerce, for instance—may extend beyond the places where they are built and beyond the people who use them directly. All three of those

characteristics of highway infrastructure tend to limit the incentives for the private sector to provide it. The private sector, on its own, would provide less of that type of infrastructure than is socially beneficial.¹

The Role of the Federal Government and State and Local Governments

From the point of view of economic efficiency, decision-making authority is best placed with those who have the incentive (along with the information) to weigh all of the costs and benefits of the decisions. Whether the federal government or state or local governments make more efficient decisions about highway projects depends on who receives the benefits of those decisions and who bears the costs. Having the federal government select highway projects at the national level promotes projects with broader geographic benefits, but state and local governments may be best situated to identify and set priorities among highway projects if the benefits are expected to be realized primarily at the state or local level.

The benefits of highway projects vary significantly in their size and geographic scope, and realizing the greatest economic gains from highway spending depends on identifying economically advantageous projects. To the extent that spending on highway infrastructure contributes to improved economic performance on a wide scale—by, for instance, lowering the costs of transporting labor and materials to production facilities and finished goods to consumers throughout the country or a broad region—having those spending decisions made at the federal level is more efficient because it aligns the decisionmakers with the geographic scope of the benefits. Therefore, certain kinds of spending (for example, to facilitate transportation planning in areas that encompass different states) or spending on certain kinds of highways (such as those in the Interstate system) may be more efficiently directed by the federal government.

1. For a fuller discussion of the role of the public sector in providing highway infrastructure, see Congressional Budget Office, *Public Spending on Transportation and Water Infrastructure* (November 2010).

However, many of the benefits of highway projects are concentrated locally or in small regions rather than accruing nationally. In those instances, state and local officials generally have better information about what projects make the most sense for their areas and are likely to be in a better position than federal planners to make efficient decisions about the projects.

Currently, the Congress determines how much federal spending each state receives for highways, primarily through the use of formulas and, to a lesser extent, through appropriations directed to special-purpose programs and specific projects. Of the funds appropriated to the Department of Transportation (DOT) for highways under SAFETEA-LU from 2005 to 2009, about four-fifths was distributed using formulas, as directed by that law. Those formulas allocated spending to states through programs designed for a variety of purposes: the construction, improvement, and maintenance of highways and bridges; safety; pollution reduction; planning; and alternate forms of transportation.² The formulas use different criteria (such as each state's share of highway lane-miles, vehicle-miles traveled, fuel use, population, or contributions to the Highway Trust Fund) to determine the share of funds available to each state under a particular program. Once the Congress determines the formulas and the grants are allocated, the states determine which specific projects to undertake with those funds on the basis of their own criteria.

In most cases, the law requires federal funds to be "matched" with state or local dollars. Most states and localities need to supply only 20 percent of the funds for projects involving federal funds, and the federal government provides the rest. In cases in which capital spending is anticipated to provide predominantly local benefits, the federal government could place more of the responsibility of paying for highway infrastructure with state and local governments by increasing the rate at which they need to match federal funding. Evidence suggests that if federal spending decreased, then spending by states would increase to some extent.³

Although the current formulaic approaches to dividing federal resources for highways among the states may address notions of fairness or equity, the formulas do not

necessarily provide federal support to the most economically advantageous projects. For example, the economic benefits of highway spending may be greater in areas with more congestion or in areas of greater anticipated population growth and economic activity, but the current approach may direct federal resources to areas where the benefits of additional spending for highways are less. Similarly, costs to construct and improve highways may depend more on population density and geographic features than on other factors that are more important in the formulas, such as the size of a state's highway system and its recent level of use.

The remaining one-fifth of highway funding provided by SAFETEA-LU was allocated to special-purpose programs and specific projects through mechanisms other than formulas. Those funds were divided among states on the basis of criteria specified in law or at the discretion of the Secretary of Transportation. About half of this portion of funding was directed by the Congress to individual projects, such as building a specific bridge or widening a particular stretch of road. The Congress may specify particular projects for reasons it deems appropriate—equity, efficiency, or some other consideration—but to the extent that the selection of those projects is not based on efficiency considerations, the federal government could promote efficiency by encouraging the funding of high-value projects using more systematic analysis of their costs and benefits.

Alternative Methods for Selecting Projects

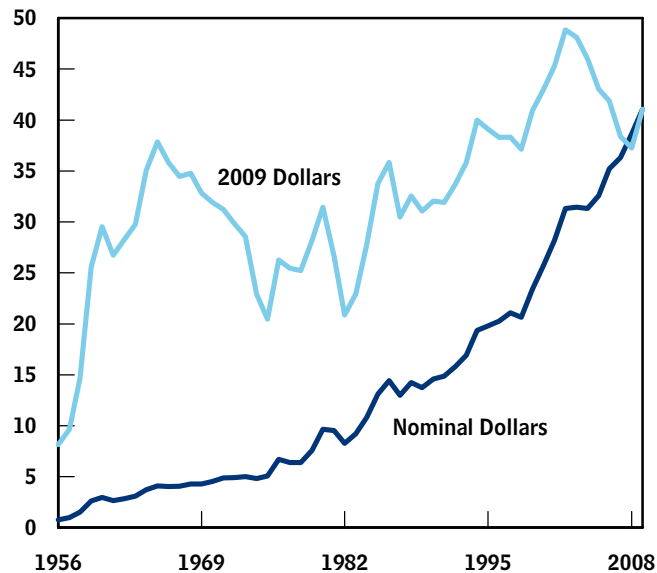
The Congress has authorized or considered several alternative methods for selecting highway infrastructure projects. A small portion of highway funds is awarded through competitive processes for selecting projects, with states and localities submitting applications for assistance to DOT. In particular, the Transportation Infrastructure Finance and Innovation Act (TIFIA) program is designed to attract private investment, particularly to projects that create new capacity. DOT evaluates eligible projects for selection on the basis of the extent to which they generate economic benefits, leverage private capital, promote innovative technologies, and meet other objectives of the program. Since 2008, the demand for assistance has

2. See Department of Transportation, Federal Highway Administration, *Highway Statistics 2009*, Table FA-4A, for a list of 2010 apportionment formulas, and www.fhwa.dot.gov/safetealu/factsheets.htm for descriptions of the programs' purposes.

3. In the opposite case, when federal highway grants increased in the 1980s and into the 1990s, states appear to have offset roughly half of the increases by reducing their own funding. See Government Accountability Office, *Federal-Aid Highways: Trends, Effects on State Spending, and Options for Future Program Design*, GAO-04-802 (August 2004).

Figure 1.**Total Federal Spending for Highways, 1956 to 2009**

(Billions of dollars)



Source: Congressional Budget Office.

exceeded the available funds, so the selection process has become effectively competitive. Similarly, as part of the American Recovery and Reinvestment Act of 2009, the Transportation Investment Generating Economic Recovery (TIGER) program makes awards for transportation projects, including highway projects, on a competitive basis. DOT selects grant recipients among state and local governments on the basis of criteria that include the results of cost-benefit analyses, and the recipients must show a significant impact on the nation, a region, or a metropolitan area.⁴

Programs that provide for a mix of federal and state and local government decisionmaking through competitive submissions by states and localities are an alternative to allocating funds through formulas or to specific projects. The efficiency of the projects funded by such programs depends on how well the criteria used to evaluate the submissions capture their costs and benefits. The degree of competition depends on the structure of the program and

the amount of funds available relative to the volume of applications received.

Another alternative is to use a quasi-governmental institution, such as a so-called “infrastructure bank,” to make decisions about which projects receive federal funds. The advantages and disadvantages of placing decisionmaking authority for highway infrastructure with an infrastructure bank would depend on the scope of its responsibilities and the specific design of its decision-making process. An infrastructure bank could provide coordinated funding for projects encompassing different types of infrastructure (transportation and drinking water projects, for example), different kinds of transportation infrastructure (such as highways and transit), or just a single kind (such as highways). An infrastructure bank operating across different kinds of infrastructure would be able to compare the relative costs and benefits of a broader array of projects; however, users of one kind of infrastructure might be concerned about the possibility of losing funding to another kind of infrastructure. Efficiency would be enhanced by explicitly evaluating projects on the basis of their costs and benefits to society; as long as the demand for funds exceeded the supply, competition based on costs and benefits would make it more likely that only those projects estimated to provide substantial net benefits would receive funding. However, such a process would result in less local control over projects than the current system, and it could engender concerns about geographic equity if fewer projects were selected in some states or localities.

Spending for Highway Infrastructure

Among its many possible choices for future highway spending, the Congress could extend current spending, target certain performance measures, or fund projects with benefits that exceed their costs by certain amounts. Depending on the performance targets or threshold of benefits chosen, total spending could increase or decrease.

Extend Current Spending

One approach is to base future spending on existing amounts, such as maintaining the same spending either with or without adjusting for the effects of inflation. Total federal spending on highway infrastructure for 2009 amounted to \$41 billion (see Figure 1); of that amount, \$39 billion was for capital projects, and \$2 billion was for operations and maintenance. Real (that is, inflation-adjusted) government spending for highway

4. SAFETEA-LU also authorized the Projects of National and Regional Significance program, providing for DOT to award funds competitively. Although DOT established guidelines for selecting projects that included their economic costs and benefits, ultimately no funds were allocated for those competitive awards.

construction has increased, on balance, during the past 30 years. However, such spending declined in the middle of the 2000s, when the cost of materials used to build highways increased sharply because of increases in U.S. demand arising from residential and commercial construction and in worldwide demand from countries such as China. Going forward, capital spending could be indexed to the costs of highway construction or to overall prices in the economy.⁵ However, if existing levels of inflation-adjusted spending were maintained over decades, the Federal Highway Administration (FHWA) estimates that the performance and quality of the highway system would decline—with increases in delays caused by traffic congestion and increases in the amount of travel on roads with pavement of less than acceptable quality.

Target Performance Measures

Spending could instead be targeted to different measures of the performance of the highway system, such as average delay, pavement quality, or user cost. According to the most recent projections by FHWA, which are based on 2006 data, maintaining the highway system at its current performance would require \$126 billion per year in capital spending by all levels of government.⁶ Historically, federal capital spending for highways has constituted about 45 percent of all capital spending. If FHWA's assessment is accurate, based on that share, the necessary federal spending per year would be about \$57 billion—an amount that exceeds actual federal capital spending for highways in 2009 by \$18 billion, or nearly 50 percent.

5. Technically, budget authority, not outlays, would be indexed to a measure of inflation. Budget authority is the authority for the federal government to enter into financial obligations.

6. See Department of Transportation, Federal Highway Administration and Federal Transit Administration, *2008 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance*, pp. ix, xii. FHWA's report defines the system's performance in terms of average user costs, including the costs of travel time, operations, and accidents. The figure cited assumes that added spending would be financed by revenues from a user charge, such as a toll, fuel tax, or tax based on vehicle-miles traveled that does not vary with congestion, rather than from general revenues, which would increase the spending needed to maintain the system's performance. FHWA's estimate is similar to the Congressionally chartered National Surface Transportation Infrastructure Financing Commission's estimate of \$131 billion (in 2008 dollars) as the annual average spending needed to maintain the performance of the highway system. See National Surface Transportation Infrastructure Financing Commission, *Paying Our Way: A New Framework for Transportation Finance* (February 2009), p. 53. Unless otherwise noted, spending estimates in the text are expressed in 2009 dollars.

Spending by state and local governments would also need to increase significantly to meet that target.

FHWA categorizes capital spending as being for expanding, enhancing, or rehabilitating the highway system. According to an analysis by the agency, to sustain the system's performance, more of the spending for Interstate highways should go toward expansion and less toward rehabilitation.⁷ The analysis also suggests that spending for the entire highway system, including all highways and roads, is generally appropriately allocated among those three endeavors but that spending more in urban areas and less in rural areas would improve the system's performance.

Fund Projects for Which Benefits Exceed Costs

Estimates of economic returns on public spending on highway infrastructure have been positive on average, but returns for individual projects vary significantly and depend on a number of factors.⁸ In general, the economic gains from investing in highways appear to have been greatest during the initial construction of the Interstate Highway System but have fallen off since then.

Carefully selected highway infrastructure projects can enhance the economy's performance, but realizing potential gains depends crucially on identifying economically justifiable projects. Even within a group of projects for which benefits exceed costs, some projects offer greater returns than others. Systematically ranking and funding projects so that only those with the highest net benefits are implemented could yield a large share of the total possible benefits at a lower cost.

By FHWA's estimates, the amount of public spending that could be justified on the basis of projects' benefits outweighing their costs would be \$208 billion per year. Using a minimum threshold for benefits to exceed costs (such as 20 percent or 50 percent) would also provide an allowance to account for the opportunity costs of public spending on highways. Specifically, raising revenues or borrowing to support such spending could lead to inefficiencies in the private sector, and reducing spending on other public purposes could lead to smaller benefits in

7. Department of Transportation, Federal Highway Administration and Federal Transit Administration, *2008 Status of the Nation's Highways, Bridges, and Transit*, Chapter 8.

8. For further discussion of the economic returns on infrastructure spending, see Congressional Budget Office, *Issues and Options in Infrastructure Investment* (May 2008).

those areas. According to FHWA's analysis, \$187 billion annually would provide for all projects with benefits that outweigh their costs by at least 20 percent; and \$164 billion, for projects for which benefits exceed costs by at least 50 percent. If the federal government funded its share of that \$164 billion at the historical average, its annual capital spending for highways would need to increase by about \$35 billion, almost doubling the 2009 amount of \$39 billion.

Notably, spending could be substantially lower if demand for highway travel was reduced by charging fees to highway users that reflected the costs they impose on others when they drive during periods of congestion. Congestion fees would promote efficient use of existing infrastructure by allocating its use to those willing to pay the charge.⁹ To the extent that some drivers would choose to reduce their vehicle use during congested times of the day rather than pay the fee, congestion would be reduced—which would, in turn, reduce the amount of spending needed for infrastructure. According to FHWA's estimates, widespread use of congestion pricing would reduce the amount of capital investment needed to sustain the operational performance and condition of the highway system by nearly one-third—from \$126 billion per year to about \$85 billion per year. Of that amount, the federal share, at the historical average of 45 percent, would be \$38 billion—about the same as the 2009 level of spending. For the larger set of projects for which benefits exceed costs, congestion pricing could reduce spending by a quarter, from \$208 billion to \$157 billion. Based on the historical average, the federal share of that smaller figure would be \$71 billion.

Paying for Highway Infrastructure

Although federal, state, and local governments can impose a variety of taxes, fees, and user charges, the funds to pay for highway infrastructure are ultimately drawn either from users of that infrastructure or from taxpayers in general. The federal government and state governments also have mechanisms for borrowing funds and for obtaining financing from the private sector (including both debt and equity investments); however, those funds are provided in expectation of future returns, which must be paid later by highway users or taxpayers.

9. For a comprehensive discussion of the benefits and challenges of congestion pricing, including options for its design and implementation for highways, see Congressional Budget Office, *Using Pricing to Reduce Traffic Congestion* (March 2009).

The efficiency of different sources of revenues depends on the administrative costs involved in collecting them and on the incentives they provide for using the highway system and resources throughout the economy. In addition to efficiency, policymakers may also be interested in considerations of equity and in the extent to which the revenues available from a given source are sufficient to pay for the desired level of spending.

The Current Approach

The federal government's programs for highway transportation are financed, for the most part, by various taxes on users and by revenues from the Treasury's general fund that flow through the Highway Trust Fund—an accounting mechanism in the federal budget, recording specific cash inflows and outflows. Under the current system, receipts from various excise taxes, most notably those on the sale of gasoline, diesel, and other motor fuels, are collected and credited to the trust fund. The fund comprises two separate accounts: one for highways and one for mass transit.

The largest sources of revenues for the trust fund are excise taxes of 18.4 cents per gallon of gasoline and 24.4 cents per gallon of diesel fuel.¹⁰ The gas tax currently produces about two-thirds of the fund's total revenues, and the diesel tax accounts for about one-quarter; under current law, those taxes are scheduled to expire in 2011. The trust fund is also credited with revenues from an excise tax on tires used by heavy trucks, a sales tax on heavy trucks and trailers, and an annual tax on the ownership of heavy trucks. Together, those additional three sources provide about 10 percent of the revenues going into the fund. In fiscal year 2009, the revenues credited to the trust fund totaled \$36 billion.

At their current levels, the taxes in effect are insufficient to fully fund the existing amount of federal highway spending. Because spending from the fund has exceeded its revenues for a number of years, on several occasions since 2008 the Highway Trust Fund has needed additional infusions of revenues from the Treasury's general fund. According to the Congressional Budget Office's (CBO's) estimates, if the historical spending and revenue patterns continued in the future, the highway account of the trust fund would be unable to meet its obligations

10. The Leaking Underground Storage Trust Fund receives 0.1 cents per gallon of those taxes on gas and diesel fuel.

sometime during fiscal year 2012.¹¹ Similarly, for the 2011–2021 period, outlays would exceed revenues and interest credited to the fund by about \$120 billion.

User Charges

Economic efficiency is promoted when users of highway infrastructure are charged according to the marginal (or incremental) costs of their use, including external costs that are imposed on society. A combination of a fuel tax and a mileage-based tax could provide incentives for reducing the full range of driving's social costs while also generating funds for federal spending. Moreover, if truck users were charged directly for the fuel-related and mileage-related costs they impose, the existing taxes on trucks and tires could be eliminated.

The external costs of highway use vary widely depending on the characteristics of the vehicle driven and its location. Some external costs are associated directly with the use of motor fuel, such as the costs of local air pollution from trucks, climate change, and dependence on foreign oil. Others are related to the miles traveled by vehicles, such as road congestion, pavement damage, and accidents. Although the external costs imposed on society by trucks are greater than those imposed by passenger vehicles on a per-mile basis, the much higher volume of passenger vehicle travel means that those vehicles also contribute substantially to external costs. Specifically, passenger vehicles account for more than 90 percent of vehicle-miles traveled, with passenger vehicles in urban areas alone accounting for more than 60 percent. Passenger vehicles' contribution to traffic congestion in urban areas imposes estimated costs of about 10 cents per mile, constituting one of the largest sources of external costs of motor vehicle use. Estimates of pavement damage by trucks, the largest per-mile external cost of truck use, range from about 5 to 55 cents per mile depending on the weight of the truck, the number of axles over which its weight is distributed, and where it operates—making

those vehicles another significant source of external costs, even taking into account that truck travel represents less than 10 percent of miles traveled. Accidents, noise, air pollution, and other fuel-related costs from passenger vehicles and trucks represent smaller shares of external costs.¹²

Just as external costs of highway use are related to fuel use or miles traveled, user charges take the form of taxes on fuel and mileage-based fees. The charges differ in the administrative costs they entail and in how efficiently they match the external costs that users impose. User charges may be borne to a different extent by people in different income groups or in different geographic areas.

Fuel Taxes. There are several advantages to drawing some of the funds for highway infrastructure from taxes on gasoline and other motor fuels. One advantage is that collection costs are low; another is that evading the tax is difficult. In addition, fuel taxes provide incentives to reduce the social costs of driving. Vehicles that travel farther burn more fuel and therefore cost drivers more in fuel taxes. The resulting incentive to drive less reduces the social costs posed by greenhouse gas emissions, dependence on oil, and local air pollution.

At current tax rates, the fuel tax revenues that flow into the Highway Trust Fund are insufficient to maintain the current and likely future levels of highway spending. Those existing taxes on gasoline and diesel fuel are a fixed number of cents per gallon and thus do not increase with inflation. Policymakers could choose to stabilize the trust fund's purchasing power by indexing fuel taxes to account for inflation. Even so, changes to the nation's vehicle fleet that reduce gasoline use, including increased fuel efficiency and the use of hybrid vehicles, could limit the trust fund's receipts over time.

Current fuel taxes also generate insufficient revenues to pay for the costs that users impose on the system. Vehicles do more much more damage to pavement and bridges the heavier they are. A four-axle, single-unit truck weigh-

11. Spending from the trust fund is constrained by an annual limit on obligations that is set in an appropriation act. For the purposes of its baseline projections, CBO projects spending from the trust fund by adjusting that annual limit on obligations for future inflation; spending rates may vary from year to year depending on Congressional actions and other factors such as states' construction schedules and plans. Also, changes in oil prices, the economy, and the fuel efficiency of vehicles can all cause future revenues to differ from CBO's projections. Small deviations from those projections would not significantly affect the future status of the trust fund or the expected imbalance between obligations and resources.

12. See Department of Transportation, Federal Highway Administration, *1997 Federal Highway Cost Allocation Study*, available at www.fhwa.dot.gov/policy/otps/costallocation.htm—specifically, Tables V-22 (Noise), V-23 (Congestion), V-24 (Accidents), and V-26 (Pavement damage) from the “Final Report” (August 1997) and Table 13 (Air pollution) from the “Addendum” (May 2000). For estimates of fuel-related costs, see Ian W. H. Parry, “How Should Heavy-Duty Trucks Be Taxed?” *Journal of Urban Economics*, vol. 63, no. 2 (2008), pp. 651–668.

ing 60,000 pounds causes six times as much pavement damage as a comparable truck weighing 40,000 pounds.¹³ In contrast, the difference in fuel use by those vehicles for a given distance of travel, and thus the amount of fuel taxes paid, is much smaller. Moreover, current taxes do not account for the costs of congestion. A driver on a congested road uses only a little more fuel than he or she would use if driving on an uncongested road but, in terms of delay, imposes much greater costs on other drivers. With state and local fuel taxes and fees included, the national average tax on gasoline is 47 cents per gallon.¹⁴ Various studies suggest that the external costs of motor fuel use are at least \$1 per gallon, suggesting that, to fully reflect those costs, excise tax rates for motor fuels would need to be substantially higher than current rates. However, if vehicles were also taxed according to the external costs associated with the miles they traveled, then the efficient excise tax rates on motor fuels would probably be lower than current rates.

Because fuel tax rates are the same for all purchasers of gasoline, regardless of income, lower-income households use a larger share of their income to pay them. An analysis of 2004 data showed that households with income between \$23,700 and \$65,000 (in 2004 dollars) paid 0.65 percent of their income in fuel taxes, while households with income over \$99,501 paid only 0.5 percent.¹⁵

Mileage Charges. Because about 85 percent of the external costs of driving are associated with the number of miles traveled rather than the amount of fuel consumed, paying for highways with user charges would be most economically efficient if it involved substantial mileage-based fees. A number of such fees already exist in the current financing system at the state and local levels. Greater use of those fees would provide better incentives for highway users to reduce their contribution to congestion, accident risk, and pavement damage.

Mileage-based fees could take different forms, including tolls on particular roads or vehicle-miles traveled (VMT)

charges. To the extent that such fees varied by location, vehicle type, and time of day, the fees could closely match some of the social costs imposed by drivers. Tolls are already widely used on many roads and bridges, and they achieve a measure of efficiency when they vary by vehicle type in a way that covers the cost of pavement damage. Tolls can be even more efficient when they vary by time of day, because the cost a driver inflicts on other drivers is higher during periods of peak use. VMT charges could apply to all road use and could vary by time, location, or both. Unlike tolls on specific roads, VMT charges implemented nationwide could produce enough revenues to fund the federal contribution to building and maintaining highways.

The costs of implementing a system of VMT charges would include the costs of equipment and the ongoing administrative costs to run the system and collect the revenues. Those implementation costs are not necessarily prohibitive, but they would be higher than the costs of collecting motor fuel taxes. According to a preliminary estimate by DOT, the necessary equipment could cost the government \$10 billion.¹⁶ Any in-vehicle devices required to determine the amount, time, and location of highway use, such as global positioning system receivers, would add to the cost of putting VMT charges in place. After those costs were incurred, ongoing administrative costs (based on estimates from other countries) might be several times the costs for administering the gas tax, which are about 1 percent of the revenues generated.¹⁷

Specific occasions of imposing new tolls or mileage-based fees would probably need to address concerns about individual and geographic equity. The presence of attractive transit alternatives could mitigate such concerns. In addition, if implementing VMT charges involved tracking vehicle positions so as to vary charges by location in order to provide the strongest incentives for efficient highway use, privacy concerns would need to be considered.

13. Department of Transportation, Federal Highway Administration, "Addendum to the 1997 Federal Highway Cost Allocation Study" (May 2000), Table 13.

14. American Petroleum Institute, *Motor Fuel Taxes: Summary Report* (October 2010), available at www.api.org/statistics/fueltaxes/.

15. Andrew Chamberlain and Gerald Prante, *Who Pays Taxes and Who Receives Government Spending? An Analysis of Federal, State and Local Tax and Spending Distributions, 1991–2004*, Working Paper No. 1 (Washington, D.C.: Tax Foundation, March 2007), p. 42.

16. National Surface Transportation Infrastructure Financing Commission, *Paying Our Way: A New Framework for Transportation Finance* (February 2009), pp. 150–151.

17. Ibid. See also I-95 Corridor Coalition, *Administrative and Legal Issues Associated with a Multi-State VMT-Based Charge System* (November 2010); and European Conference of Ministers of Transport, *Conference on Road Charging Systems—Technology Choice and Cost Effectiveness: Summary and Conclusions* (June 2006), Table 1, available at www.internationaltransportforum.org/europe/ecmt/taxes/RdCharging06.html.

General Revenues

To the extent that benefits from highway spending accrue to the nation as a whole, to both people who use highways and people who do not, some commitment of revenues from the Treasury's general fund may be economically justified. A potential advantage of using general revenues is the large amount that can be raised. Moreover, concerns about equity can be addressed directly through the setting of tax rates, and the incremental costs of collecting additional general revenues are negligible. However, taxpayers are often a less efficient source of financial support for infrastructure than the direct beneficiaries of that investment. Financing infrastructure through general revenues provides no incentive for the efficient use of the system. Moreover, collecting additional general revenues would increase the disincentive that taxes pose for people to work and invest. Furthermore, redirecting general revenues from other public purposes to highways would reduce social benefits in those other areas.

Borrowing and Private Financing

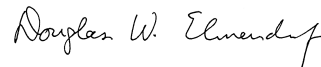
To pay for highways, in addition to spending current revenues collected from user fees and taxes, the federal government may borrow or support borrowing by state and local governments or financing by the private sector. Both approaches involve their own advantages and disadvantages. Borrowed funds are not a source of "new money," because repaying the funds ultimately depends on user fees or tax revenues. But borrowing against future revenues may accelerate the realization of projects' benefits because construction can begin sooner.

Besides borrowing through the Treasury, the federal government has several financing tools that involve subsidizing state and local governments and private entities that provide funds for highway spending. The federal government can subsidize the cost of borrowing by state and local governments through tax-exempt bonds, tax credit bonds, and directly subsidized bonds (such as Build America Bonds).¹⁸ The federal government can also provide credit subsidies such as low-rate loans, loan guarantees, and lines of credit, as it does through the TIFIA program. In some cases, public-private partnerships contractually transfer responsibilities and risks from

the public sector to the private sector, including those involved in financing highway projects. Finally, some analysts have proposed creating a national infrastructure bank to provide loans; loan guarantees; lines of credit; or, in some instances, grants—much like transactions under the TIFIA program but provided through a separate institution.

Private financing of highway projects, which is currently only a small part of total financing, requires pledging future revenues to the private entities providing the funds. Whether private financing takes the form of debt or equity, private spending will typically be repaid—with a positive rate of return—through tolls, tax revenues, or both. Linking private companies' opportunities for profits with their responsibility for tasks, such as construction or operations, may provide additional incentives to meet cost and schedule targets. Those additional incentives result from reallocating risk from the government to the private sector. To the extent that a program soliciting private financing reduces the federal share of a project's costs or risks, it does so by increasing the share borne by the private sector.

This brief was prepared by Chad Shirley. It and other CBO publications are available at the agency's Web site (www.cbo.gov).



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18. For further discussion of the use of bond financing for infrastructure spending, see Congressional Budget Office and Joint Committee on Taxation, *Subsidizing Infrastructure Investment with Tax-Preferred Bonds* (October 2009).